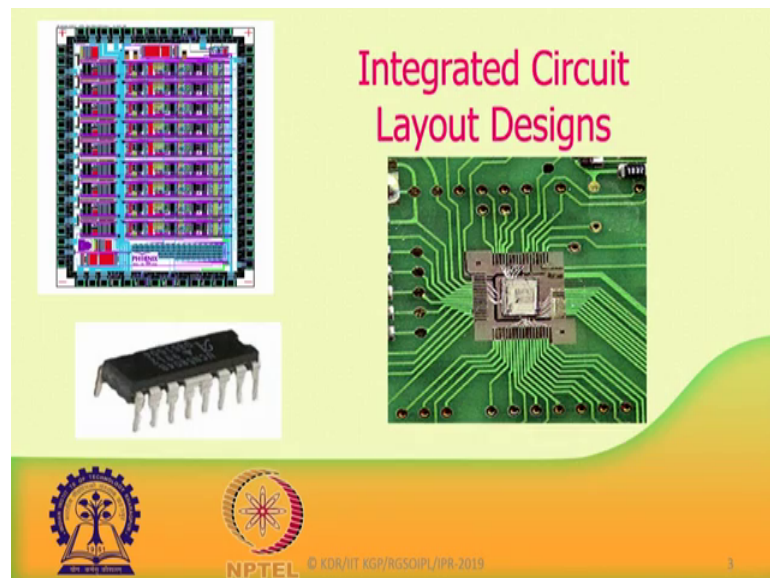


Intellectual Property Rights, and Competition Law
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Lecture - 06
Integrated Circuit Layout Designs

We will next look into a very small piece of legislation i.e. *Integrated Circuit Layout Designs*. I hope that you may have heard about the layout designs and also about the integrated circuits.

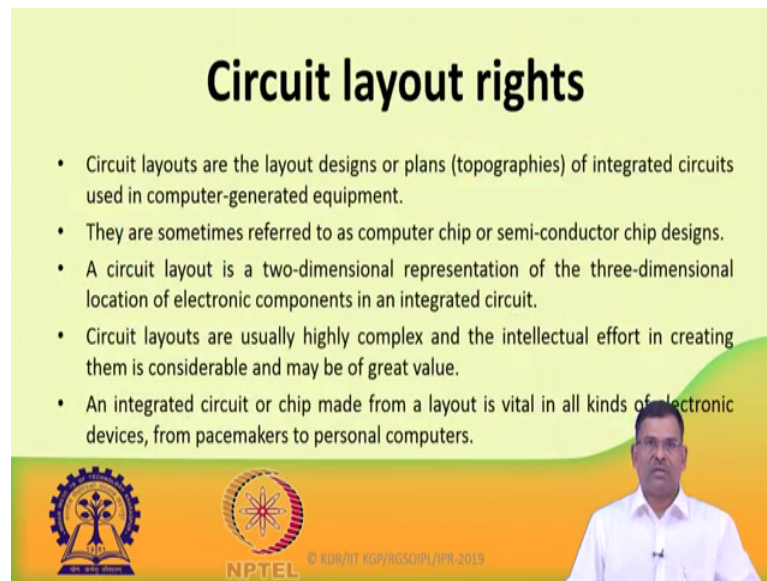
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You can see the layout design. What is the integrated circuit layout designs? The *TRIPS* agreement provides for protection of these integrated circuit layout designs. These are very complex boards prepared by companies.



So, they require protection because otherwise they can be easily copied by other manufacturers. And these materials are not independent materials, these are mostly used in other hardwares for as I told you IC; Integrate Circuits are used in most of the electronic goods. So, they require protection that is why they are included in the *TRIPS* agreement.

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Circuit layout rights

- Circuit layouts are the layout designs or plans (topographies) of integrated circuits used in computer-generated equipment.
- They are sometimes referred to as computer chip or semi-conductor chip designs.
- A circuit layout is a two-dimensional representation of the three-dimensional location of electronic components in an integrated circuit.
- Circuit layouts are usually highly complex and the intellectual effort in creating them is considerable and may be of great value.
- An integrated circuit or chip made from a layout is vital in all kinds of electronic devices, from pacemakers to personal computers.

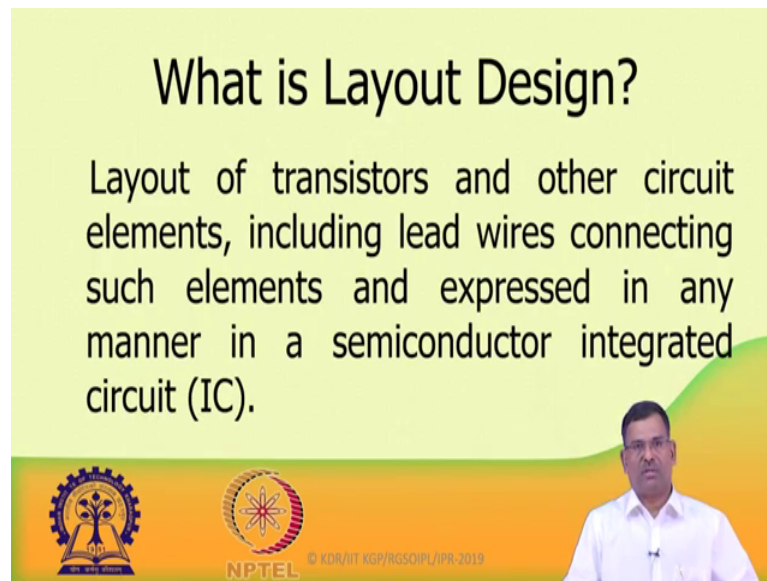
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And what is this circuit layout rights? What are the rights? And what is protected in these particular boards? Circuit layouts are the layout designs or plans, topographies of integrated circuits used for computer generated equipments. And these are the assembling of many items in a single board. The board as such is considered; as it will be a circuit, as protectable under this particular intellectual property category.

So; that means, the layout is registrable under this circuit layout act. And they are sometimes referred to as computer chips or semiconductors or ICs or designs. It can be that these designs are two dimensional representation or the three dimensional location of electronic components in the integrated circuits. It is in an integrated way. So, these layouts are usually highly complex and are the intellectual effort of people which runs the hardwares. These have a greater value for each and every hardware electronic equipment.

So, an integrated circuit or chip made from layout is vital to the kinds of devices as you can see that in all the electronic goods these layout designs are very important and these can be registered as intellectual property under this particular category of intellectual property of law.

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What is Layout Design?

Layout of transistors and other circuit elements, including lead wires connecting such elements and expressed in any manner in a semiconductor integrated circuit (IC).

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And all these can be layout of circuit elements. This is the set of elements, set of electronic materials combined together in a circuit, which can be registered. So, it can be semiconductor integrated circuit that's why its known as semiconductor integrated circuit.

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Why to protect?

- IC Layouts are creations of human mind;
- There is lot of investment of time and money in the creation but copying is very cheap;
- Fertile area with new circuit designs made every day to cater for miniaturization and novel applications.

The slide features a green and yellow background. At the bottom, there are logos for IIT KGP and NPTEL, along with the text '© KDR/IT KGP/RGSOIPL/IPR 2019'. A small inset image of a man in a white shirt is visible in the bottom right corner of the slide.

So, all these together form a circuit and it can be registered and its definitely a creation of human mind for running different hardwares, different materials, different electronic

goods. So, lots of investment is required for making this particular layout designs and copying is very easy and very cheap as well. So, you require the protection in order to minimize copying. The novel applications should come or innovations will come from protection of intellectual property.

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Why special protection?

- There may not be novelty so cannot be patented;
- Copyright protection does not return the investments since commercial life of a design is limited.

The slide features a light green background with a yellow-to-orange gradient at the bottom. On the left, there are two circular logos: one for IIT Kharagpur and another for NPTEL. The NPTEL logo includes the text 'NPTEL © KDR/IT KGP/RGSOIPL/IPR-2019'. In the bottom right corner, there is a small video inset of a man in a white shirt speaking.

So, you require protection of these designs as well. Why a special protection is required? You can take a copyright; you can put in a paper and you can take a copyright of this, but in the board as such there is no novelty because these boards are used in all electronic goods, all hardwares.

So, the circuits are not going to pass the novelty criteria. So, that is why it requires special protection, but at the same time these boards requires special protection. And also the copyright protection is not going to serve the purpose that is why you require a special protection for these integrated circuits.

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The slide features a light green background with a yellow-to-orange gradient at the bottom. The title 'Protection is against...' is centered at the top. Below it are two bullet points: 'Act of reproducing a layout design fully or in parts;' and 'Importing, selling or distributing commercially a protected layout design or IC incorporating it.' A purple text note states: 'But identical design created *independently* by third party is not prohibited.' The bottom left contains logos for IIT KGP and NPTEL. The bottom right shows a man in a white shirt, likely the presenter. A copyright notice '© KDR/IT KGP/RGSOIPL/IPR 2019' is visible at the bottom center.

And basically, the protection is against reproducing the layout designs fully or in part. Because; you can copy half a part of it, which can end up in a particular work or ending in a particular end result.

So, if you use it fully or half of the design, which may give entire different results. So, this is prohibited you cannot use it fully or in half of any of these layouts without the permission. And importing and selling, distribution commercially also is prohibited under this particular protection law. So, you cannot simply import the boards and use it for making the goods. And also you can see that, identical designs created independently by third party is not prohibited, but it practically never happens that identical designs are created independently.

So, always you refer to the earlier box whichever is available. Whether, it is layout designs or it is any other things. So, you require a special protection for the integrated layout designs.

This is a very small act which gives protection to a single industry that is the integrated layout designs which requires special protection mainly because there is no hardware. No electronic goods are available without these specially layout designs or integrated circuits.

I would not say that this is insignificant, but this is a special kind of an intellectual property protection which is available to the layout designs.

Thank you.